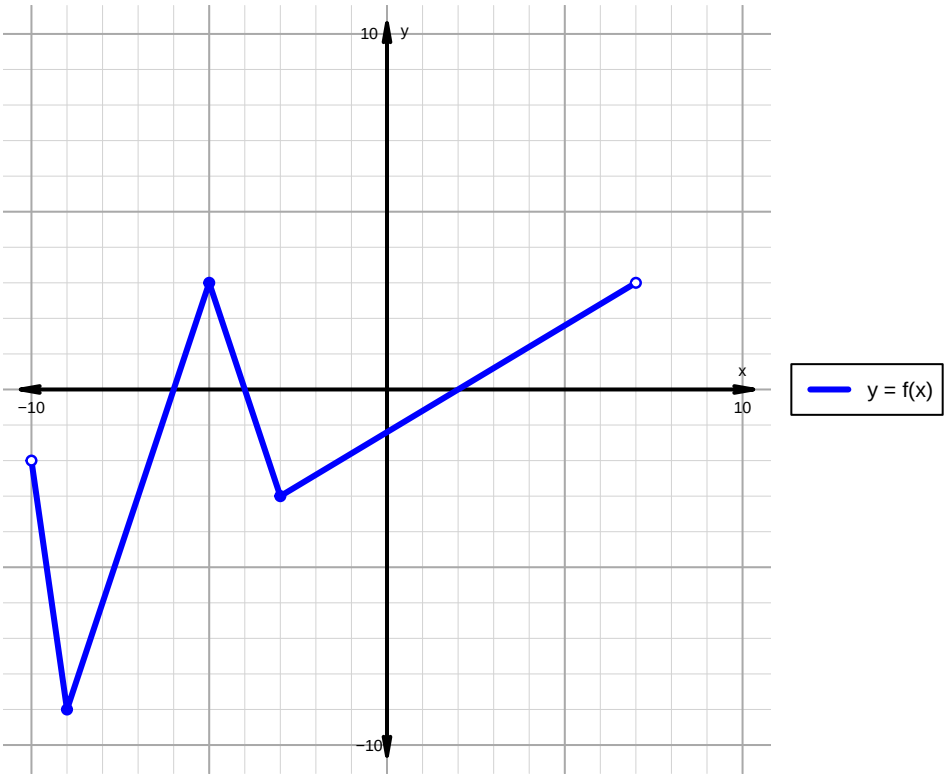
Name: Date:

Intervals, Transformations, and Slope Solution (version 128)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-4)\cup(2,7)$
Negative	$(-10,-6)\cup(-4,2)$
Increasing	$(-9,-5)\cup(-3,7)$
Decreasing	$(-10,-9)\cup(-5,-3)$
Domain	$(-10,7)$
Range	$(-9,3)$

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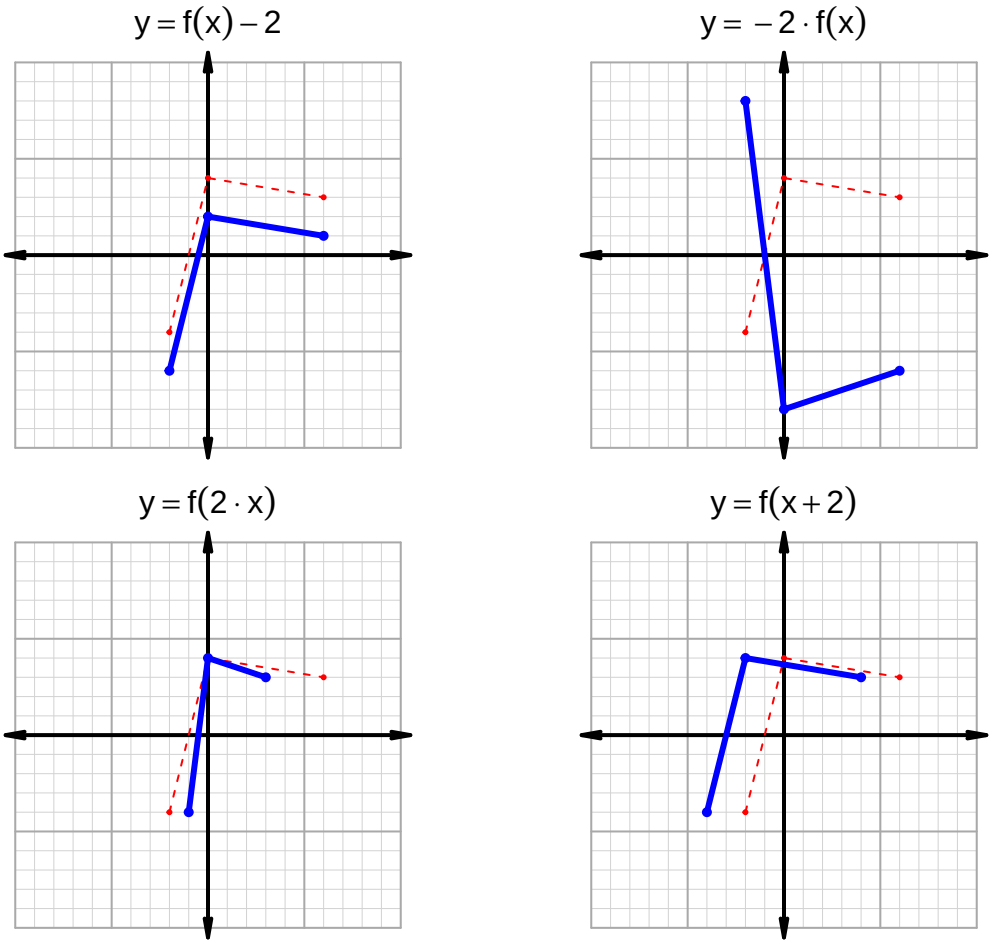
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 68$ and $x_2 = 83$. Express your answer as a reduced fraction.

x	$g(x)$
26	83
44	68
68	26
83	44

$\frac{f(83)-f(68)}{83-68} = \frac{44-26}{83-68} = \frac{18}{15}$

The greatest common factor of 18 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{6}{5}$$